

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD

SAN FRANCISCO BAY REGION

ORDER NO. 72-85

WASTE DISCHARGE REQUIREMENTS
FOR
UNION OIL COMPANY OF CALIFORNIA

The California Regional Water Quality Control Board, San Francisco Bay Region finds:

1. Union Oil Company of California discharges 40 mgd of mixed process and cooling wastewater from their 89,500 barrels per day petroleum refinery into San Pablo Bay 2000 feet south of the San Francisco Refinery pier. In addition Union Oil Company discharges approximately 7 mgd of once through salt water, cooling water into San Pablo Bay 1000 feet south of the San Francisco Refinery pier.
2. The Board adopted an Interim Plan for the San Francisco Bay Basin in June, 1971.
3. The beneficial uses of San Pablo Bay as set forth in the Interim Basin Plan include:
 - a. Industrial water supply
 - b. Recreation
 - c. Esthetic enjoyment
 - d. Preservation and enhancement of fish and wildlife
 - e. Navigation
4. The requirements hereinafter prescribed are necessary to implement the Basin Plan for San Francisco Bay, protect the beneficial uses of San Pablo Bay, and prevent nuisance.
5. The Board has notified the discharger and interested agencies and persons of its intent to prescribe waste discharge requirements for Union Oil Company.
6. The Board in a public meeting heard and considered comments pertaining to the discharge and requirements prescribed herein.

IT IS HEREBY ORDERED, Union Oil Company shall comply with the following:

- A. Discharge Specifications--Process Wastewater (excluding once through cooling water).

1. Neither the treatment nor the discharge shall create a nuisance as defined in Section 13050(m) of the California Water Code.
2. Representative samples of the discharge shall not contain constituents in excess of the following limits:

<u>Constituent</u>	<u>Units</u>	<u>Mean</u>	<u>Maximum</u>
Settleable matter	ml/l/hr	0.1	0.5
5 Day 20°C BOD	lbs/day	1160	2320
Ammonia(N)	lbs/day	620	1240
Phenol	lbs/day	8.0	16.0
Total Sulfide	lbs/day	18	45
Total Chromium	lbs/day	3.6	7.2
Toxicity Emission Rate ^{1/}	(Toxicity Units)mgd	3.6	9.0
Oil and Grease	lbs/day	900	1800
Zinc	lbs/day	9.0	18.0

3. The process wastewater shall receive an initial dilution such that the concentration of waste in the receiving waters is less than 1/20 of the 96-hour median tolerance limit (TLM) of the waste. If the TLM exceeds 100 percent, this requirement does not apply.
4. The discharge shall not have a pH of less than 7.0 nor greater than 8.5; or 6.5 to 8.5 when the natural ambient value is as low as 6.5.
5. At a point(s) in the waste treatment process, where all sanitary wastes are present the median most probable number of coliform organisms in any 30-day period shall not exceed 230 MPN/100ml, nor shall any value exceed 10,000 MPN/100ml.

^{1/} The limits on the toxicity emission rates will not apply if the mean toxicity concentration is less than 0.59 toxicity units and the maximum toxicity concentration is less than 0.87 toxicity units.

B. Discharge Specifications--Once Through Cooling Water

1. Neither the treatment nor the discharge shall create a nuisance as defined in Section 13050(m) of the California Water Code.
2. Representative samples of the discharge shall not contain constituents in excess of the following limits:

<u>Constituent</u>	<u>Units</u>	<u>Maximum</u>
Total Chromium	mg/l	0.015
Zinc	mg/l	0.06
Ammonia(N)	mg/l	0.3
Oil and Grease	mg/l	2.0
Phenol	mg/l	0.02
Toxicity Concentration Toxicity Units		0.59

3. The discharge shall not have a pH of less than 7.0 nor greater than 8.5; or 6.5 to 8.5 when the natural ambient value is as low as 6.5.

C. Discharge Specifications--Receiving Water

1. The discharge of waste shall not cause:
 - a. Floating, suspended, or deposited macroscopic matter or foam in waters of the State at any place;
 - b. Bottom deposits or aquatic growths at any place;
 - c. Alteration of turbidity or apparent color beyond present natural background levels in waters of the State at any place;
 - d. Visible, floating, suspended or deposited oil or other products of petroleum origin in waters of the State at any place;
 - e. Tidal waters of the State to exceed the following limits of quality at any place more than 100 feet from the discharge point:

Dissolved Oxygen Minimum - 5.0 mg/l
Annual median - 80% saturation

When natural factors cause lesser concentrations, then this discharge shall not cause further reduction in the concentration of dissolved oxygen.

pH A variation from natural ambient pH by more than 0.1 pH units.

Toxic or Other
Deleterious
Substances None shall be present in concentrations or quantities which will cause deleterious effects on aquatic biota, wildlife or waterfowl or which render any of these unfit for human consumption either at levels created in the receiving waters or as a result of biological concentration.

Undissociate
Ammonium Hydroxide Maximum - 0.2 mg/l

D. Provisions

1. Mean values shall be based on the running average of samples representative of the discharge over any 30-day period.
2. Union Oil Company shall immediately take all possible measures to achieve compliance with the discharge specifications in this order and shall submit to the California Regional Water Quality Control Board, San Francisco Bay Region, by December 15, 1972, a report delineating the immediate measures that have been or will be taken.
3. Union Oil Company shall comply with the following time schedule to assure compliance with the provisions of this order:

<u>Task</u>	<u>Completion Date</u>	<u>Report of Compliance Due</u>
Develop a work plan to meet discharge requirements and to study the reduction of heavy metals used for cooling water treatment	December 1, 1972	December 15, 1972
Develop a conceptual plan and a detailed time schedule for completion of final plans, award of construction contracts, completion of construction and compliance with requirements	December 1, 1973	December 15, 1973

4. The requirements prescribed by this order amend the requirements prescribed by Resolution No. 68-27 adopted by the Board on April 30, 1968, which shall remain in full force and effect until the date Union Oil Company of California is to be in full compliance with these requirements pursuant to a complete time schedule to be adopted by this Board.
5. This order includes items 1, 6, 7 and 8 of the attached "Reporting Requirements" dated September 11, 1972.
6. This order includes items numbered 1 through 6 of the attached "Notifications" dated January 6, 1970.

I, Fred H. Dierker, Executive Officer, do hereby certify the foregoing is a full, true and correct copy of an order adopted by the Regional Board on September 26, 1972.

Executive Officer

DEFINITION OF TOXICITY TERMINOLOGY

a. Toxicity Concentration (Tc)

Expressed in Toxicity Units (tu)

$$Tc (tu) = \frac{100}{96\text{-hr. TLM\%}}$$

b. Median Tolerance Limit (TLM%)

The TLM shall be determined by static or continuous flow bioassay techniques using standard test species.

When it is not possible to measure the 96-hr. TLM due to greater than 50 percent survival of the test species in 100 percent waste, the toxicity concentration shall be calculated by the expression:

$$Tc (tu) = \frac{\log (100 - S)}{1.7}$$

S = percentage survival in
100% waste

c. Toxicity Emission Rate (TER)

Is the product of the effluent Toxicity Concentration (Tc) and the waste flow rate expressed as mgd.

$$TER (tu \times mgd) = Tc (tu) \times \text{Waste Flow Rate (mgd)}$$